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CURRENT LITERATURE

BOOK REVIEWS

Gray's new manual of botany

It has been generally known for some time that GRAY'S *Manual* was undergoing a revision, so that the appearance of the seventh edition¹ was no surprise; in fact no book has been awaited by the botanical public, especially during the past three years, with so much interest as this one.

The present edition, contrasted with the sixth edition, presents the following more conspicuous changes: (1) a change in the geographical limits, namely by excluding the region west of the 96th meridian instead of the 100th, and in extending northeastward to include the maritime provinces and a portion of Quebec and Ontario; (2) the sequence of the families, which for the most part is in accordance with the system of EICHLER as elaborated by ENGLER and PRANTL; (3) the removal of the keys leading to the species, in the case of most of the larger genera, from the body of the text to a position immediately preceding the specific descriptions; (4) the introduction of numerous text- or marginal figures; and finally (5) in the use of a different system of nomenclature, namely the strict observance of the Vienna Code, or the nomenclatorial rules adopted at the International Congress held at Vienna in 1905.

The results of these innovations are that the flora treated is a somewhat more homogeneous one, the general arrangement and sequence of families is in accordance with advances made during recent years in the classification of plants, a greater facility and certainty in the identification of species by the use of direct keys and descriptions associated with accurately executed and reliable figures, and a greater consistency and uniformity in the use of plant names.

The general appearance of the printed page is essentially the same as in the sixth and in previous editions; the use of italics in emphasizing the more important specific characteristics is also retained. The treatment of genera and species is on the whole conservative and rational; and generic limitations are in close accord with general usage. The number of species is considerably larger than in previous editions, owing to the very active, careful, and exhaustive study of our flora during recent years.

The illustrations are judiciously distributed throughout the volume in groups where they are most useful, as, for example, in the Gramineae, Cyperaceae, Salicaceae, and Cruciferae; the Cyperaceae especially lend themselves to this type of illustration, and here they are certainly at their best. In some cases,

¹ ROBINSON, B. L., AND FERNALD, M. L., Gray's new manual of botany: a handbook of the flowering plants and ferns of the central and northeastern United States and adjacent Canada. Seventh edition, illustrated, rearranged, and extensively revised. 8vo. pp. 926. figs. 1036. New York: American Book Co. 1908. \$2.50.

for example in the Compositae, the illustrations have apparently suffered somewhat in the process of reproduction; thus for instance in the genus *Crepis* the illustrations, as reproduced, add little or nothing to the text. In general, however, the illustrations are excellent, and one only regrets that they are not more numerous.

The presswork is exceptionally good; there are few typographical errors. On page 500, however, "Abizzia" occurs instead of Albizzia, which is evidently a misprint.

The value of this work as a textbook should not be overlooked. The discriminating text and complementary illustrations present the subject-matter in a satisfactory way for teaching purposes. The illustrations themselves are for the most part insufficient for the hasty determination of the species by the student, and they can be used to advantage only in connection with the brief but clear descriptions. In this regard the book has no equal.

On the whole this new edition of the well-known GRAY's *Manual* presents a flora of the central and northwestern United States, and adjacent Canada in a single volume of convenient size and moderate price, thoroughly revised to date, incorporating the verified results of recent years of research, and fully accords with the most advanced and universally accepted views of taxonomy.—J. M. GREENMAN.

Heredity

A recent volume on heredity, by PROFESSOR J. ARTHUR THOMSON² of the University of Aberdeen, "is intended," as the preface states, "as an introduction to the study of heredity." The writer has long been known as the joint author with GEDDES of the *Evolution of sex*, but is perhaps most widely recognized as the translator of WEISMANN'S works and the exponent of Weismannism. A review of such a book in a botanical journal needs no apology, for much of the more recent work in heredity has been done with plants, and moreover the book deals with those general fields of biological research which must always be of equal interest to botanists and zoologists. These fields will ever be the meeting-ground of botany and zoology, because in this class of problems the organism is treated as such, and the fact that it is a plant or an animal is of minor importance.

The work is divided into fourteen chapters, and among the topics dealt with may be mentioned the physical basis of inheritance; heredity and variation; reversion; telegony; transmission of acquired characters; statistical and experimental study of inheritance; theories of heredity and inheritance; heredity and sex; and a final chapter is devoted to the social aspects of biological results.

Heredity and inheritance are defined as follows (p. 13): "By 'heredity' we do not mean the general fact of observation that like tends to beget like, nor a power making for continuity or persistence of characters—to be opposed to the power of varying—nor anything but *the organic or genetic relation between succes-*

² THOMSON, J. ARTHUR, Heredity. pp. xvi + 605. figs. 49. New York: G. P. Putnam's Sons. London: John Murray. 1908.